Monetary Policy and Financial Stability Connections

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Evolving Views

- **Pre-Crisis**
  - Financial stability critically important but…
    - Very difficult to identify imbalances in real time or to calibrate appropriate monetary policy response.
  - Monetary policy a “blunt tool” for addressing financial stability concerns.
    - Should be focused primarily on macro objectives.
    - Financial stability matters to the extent that it affects outlook for output and inflation.

- **Post-Crisis**
  - Many concerns about “activist” approach to monetary policy and financial stability remain.
  - But financial stability considerations are filtering into policy discussions more prominently.
Board Strategic Objectives Related to Financial Stability

- **Strategic objective 1:** Strengthen the stability of the financial sector through the development of policies, tools, and standards.
- **Strategic objective 2:** Monitor financial markets and industry practices and structures.
- **Strategic objective 3:** Monitor and supervise individual financial institutions and infrastructures.
- **Strategic objective 4:** Ensure that sufficient crisis management tools are in place.
- **Strategic objective 5:** Analyze for the Board and FOMC the role that financial stability concerns should play in setting monetary policy.
- **Strategic objective 6:** Pursue research on stress tests, macroprudential regulation and tools, and other financial stability topics.
Potential Costs of Highly Accommodative Monetary Policy

- Market Functioning
- Inflation Expectations
- Exit Complications
- Fed Losses
- Financial Stability?
  - May encourage inappropriate risk-taking and distort asset prices but also....
  - May encourage long-term funding and stronger economy.
Current Policy Debate: Monetary Policy and Financial Stability

- “We must not ignore the possibility that the low-interest rate policy may be creating incentives that lead to future financial imbalances. …A sharp correction in asset prices could be destabilizing and cause employment to swing away from its full-employment level and inflation to decline to uncomfortably low levels.”
  
  Esther George

- “…the risk scenario that I am describing…and that may be among the most relevant when thinking about the costs and benefits of our current highly accommodative policies—need not be one that is so dramatic as to call into question the viability of any large financial firm….Rather, one scenario to be worried about may simply be a sharp increase in marketwide rates and spreads at an inopportune time, such that it becomes harder for us to achieve our dual-mandate objectives.“
  
  Jeremy Stein

- “The FOMC could respond to any residual risk by tightening monetary policy. However, it should only do so if the certain loss in terms of the associated fall in employment and prices is outweighed by the possible benefit of reducing the risk of an even larger fall in employment and prices caused by a financial crisis. Hence, the FOMC’s decision about how to react to signs of financial instability—now and in the years to come—will necessarily depend on a delicate probabilistic cost-benefit calculation.”
  
  Narayana Kocherlakota
Monetary Policy and Financial Stability: Current Practice

- **Rules:**
  - Taylor rules
  - First difference rules
  - Nominal GDP targeting

- **Optimal Control:**
  - FRB/US
  - Standard quadratic loss
    \[ E\{y_t^2 + \pi_t^2\} \]
Monetary Policy and Financial Stability: Current Practice

- Scenario Analysis
  - FRB/US with alternative assumptions.
  - Provides some sense of risks to forecast but…
    - Does not say how policymakers take those scenarios into account in their decision making.
  - No guarantee that the “right” financial stability risk is addressed as a key scenario.

- Quarterly financial stability briefings
  - Quantitative surveillance.
  - Assessment of financial risks and vulnerabilities.
Issues with Current Practice

- Financial sector is not a prominent element in workhorse macro model (FRB/US)
  - FRB/US: Takes as inputs interest rates, stock prices, dollar
  - But…..
    - …does not incorporate an explicit role for financial intermediaries,
    - …or endogenous variation in risk-taking behavior of market participants,
    - …or mechanism that generates systemic risk.
    - …or mechanism for “feedback effects” on dealer positions, volatility etc. of the type observed this summer.

- Monetary policy objective function
  - Quadratic loss and certainty equivalence
    - No real role for uncertainty and risks.
    - FOMC frequently talks about a “risk management” approach to policy…taking steps to avoid relatively low probability but high cost developments.
  - Explicit financial stability objective or only implicit?
Risks and Skews

- Policymakers do focus on uncertainty and risks.
- Formal part of the quarterly Summary of Economic Projections.
- These measures should not matter much for policy with standard quadratic loss function.
Modest Steps with Current Models

- **Standard Model Objective Function:**
  
  \[ E\{y_t^2 + \pi_t^2\} = (y_t^e)^2 + (\pi_t^e)^2 + \sigma_y^2 + \sigma_{\pi}^2 \]

- **Endogenous Shocks:** Brainard (1967), Woodford (2012)
  
  \[ \sigma_y^2 = f(policy) \quad \sigma_{\pi}^2 = f(credit) \]

  - Potential tradeoffs in expected output and output variability
    - Example: Adverse shock probability affected by leverage (Woodford)
    - Example: Adverse shock, (0, -1) but with a scale factor influenced by magnitude of current and expected future policy accommodation.

- **Other Variations:**
  
  - Tradeoffs may be less pronounced with other specifications.
    
    \[ \sigma_y^2 = f(y_t^e) \]
Other Possibilities

- **Alternative Objective Functions: Higher Powers**
  - Even with exogenous shocks, variance and skew affect policy choices.
  - Higher variance encourages policymakers to get back toward the target.
  - Skews encourage a bias relative to target.

- **Endogenous Higher Moments**
  - Variance, skew, kurtosis could be functions of policy stance or endogenous variables.

- **Example: Quartic**
  - Still symmetric preferences but more weight on outliers.

\[
E\{y_t^4 + \pi_t^4\} = (y_t^e)^4 + (\pi_t^e)^4 +
\]

\[
6(y_t^e)^2 E\{\sigma_y^2\} + 4(y_t^e)E\{\varepsilon_y^3\} + E\{\varepsilon_y^4\} +
\]

\[
6(\pi_t^e)^2 E\{\sigma_\pi^2\} + 4(\pi_t^e)E\{\varepsilon_\pi^3\} + E\{\varepsilon_\pi^4\}
\]
Longer Run Research Directions

- Develop a class of macro models with more well developed financial sector or potential for financial instabilities.
  - Credit cycles, liquidity transformation and runs, possibility of feedback effects, herd behaviors
  - Connections between monetary policy and financial stability in such models
  - Evaluate optimal policy in context of these models.
  - Evaluate simple, robust rules across such models.

- Empirical work to investigate connection between stance of policy and financial variables.
  - Connections between policy stance, measures of risk aversion, leverage.
  - Connections between policy stance and measures of systemic risk.